

# PIC-1000

## SERVICE MANUAL

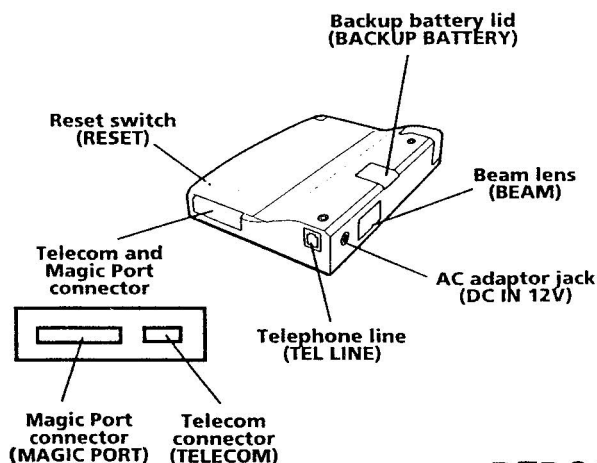
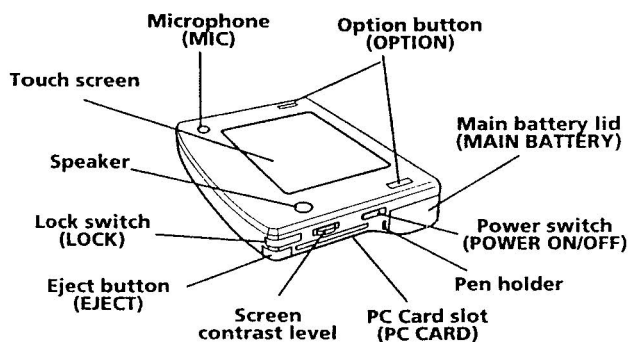
*For Primary Service*

*US Model*



### SPECIFICATIONS

#### Magic Link diagram



Model	Personal Intelligent Communicator PIC-1000
System software	Magic Cap
Communication protocol	Telescript

#### Built-in packages

##### Personal information:

Name card, Datebook, Notebook, Pocket Quicken

##### Tools:

Clock, Calculator, Phone, Spell Finder,  
Sony AV remote commander

##### Spreadsheet:

PenCell

##### Mail services:

AT&T PersonalLink Services  
America Online mail client

##### Games:

Klondike, MindBender

#### CPU

MC68349 (16MHz clock, 3.3V operation)

#### Memory

ROM 4M bytes for system and application software

RAM 512K bytes for working space, no back-up  
512K bytes, battery backed-up

—Continued on next page—



PERSONAL INTELLIGENT COMMUNICATOR  
**SONY**

## LCD

Black and white 4 level gray scale, reflective FSTN type (no backlight)

**Dot resolution** 480 x 320 dots

**Dot pitch** 100dpi (0.24mm)

**Visible area** 115 x 77 mm (4.8 x 3.2 inches)

**Contrast control** Manual with the screen contrast level

## Touch screen

Resistive film type

**Resolution** more than 100 dpi

## Modem

**Dialing** pulse and tone

**Data transfer rate** 2400 bps (max), full duplex mode

**FAX mode** 9600 bps (max) for only transmission  
Fax command is class-1.

## Sound

16-bit digital audio

**Output** speaker (mono) and teletone (mono)

**Input** built-in microphone (mono) and teletone (mono)

**Volume control** software

## BEAM Infra-red

**Data mode** 38.4K bps half-duplex data communication with other  
Magic Link within 5ft (1.5m) visible distance

**Remote mode** Send Sony audio and video equipment remote control  
commands by application software included in PIC-1000.

## PC card slot

PCMCIA ver.2.01 / JEIDA ver.4.1 compatible "slim" memory card slot  
for one card

**Main power for card** 5V DC

**Interface** TTL interface only

**Type** Type I or Type II

## Input and output connectors

**MAGICPORT connector**  
14 pin multi-purpose bus

**TELECOM connector**

TEL LINE jack

## Power

### Power requirements

100 V/240V AC, 50/60 Hz  
Using the supplied AC power adaptor connected to DC  
IN 12V jack

7.2V DC  
Using NP-500 or NP-500H rechargeable battery pack  
(not supplied)

9V DC  
Using 6 AAA alkaline batteries (supplied)

### Power consumption

4.2W DC (max) : fast charging  
1.0W DC (normal) : operation and slow charging

## Estimated battery life (measured under 77°F)

### Main :

Sony Alkaline batteries (6) •about 5 hours in normal operation  
•about 13 hours when idle

Rechargeable battery pack •about 10 hours in normal operation  
(NP-500) •about 15 hours when idle

Rechargeable battery pack •about 12 hours in normal operation  
(NP-500H) •about 18 hours when idle

### Rechargeable battery charging time

• about 6 hours when powering the Magic Link off.  
• about 11 hours when powering the Magic Link on.

### Backup:

Lithium battery •about 9 months (without main battery)  
(CR123A or DL123A)

## Operating temperature

32°F to 104°F (0°C to 40°C)

## General

**Dimensions** Approximately 7 5/7 x 1 1/2 x 5 3/5 in.  
(195.0 x 38 x 141.5 mm) (w/h/d)



**Mass** Approximately 1 lb 4.5 oz (580g)  
(including alkaline batteries)

**Clock precision** 60 seconds per 1 month

**Supplied accessories** AC power adaptor AC-PIC 1000 (1)  
size AAA Alkaline LR03 dry batteries (6)  
Lithium battery CR123A or DL123A (1)  
Telephone line cord (1)  
Battery holder PIC-BH1 (1)  
Carrying case (1)  
Special pen (1)  
PC card slot protector (1)  
Guide books  
Read This First (1)  
User's Guide (1)  
PenCell User's Guide (1)  
AT&T PersonalLink Services User's Guide (1)  
CUSTOMER INQUIRY CARD (1)  
AMERICA Online ID brochure (1)  
LICENSE AGREEMENT (1)  
LIMITED WARRANTY (1)

Design and specifications are subject to change without notice.

## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH  
MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST  
ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS  
WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN  
THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

# SECTION 1 GENERAL

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## GUIDE BOOKS

Total 4 guide books in the package of PIC-1000.

### • Read This First

-contains basic instructions for getting started with your Magic Link.

**The content is printed on this service manual.**

### • User's Guide

-contains step-by-step instructions for using the features of your Magic Link.

**The content is partially printed on this service manual.**

### • AT&T PersonaLink Service User's Guide

-describes all about PersonaLink services.

Once you've signed up with an enhanced messaging service like AT&T PersonaLink Mail, you can customize your mailbox and use new services.

Instructions for using AT&T PersonaLink are in the User's Guide.

**The content is not printed on this service manual.**

### • PenCell User's Guide

-provides detailed instructions for using your Magic Link's built-in spreadsheet package, penCell.

**The content is not printed on this service manual.**

## Service Manual publication passage

What is this model.

-Read This First: Magic Link: What is your Magic Link?....See page 4.

What are caring points of this model.

-User's Guide: Basics: Caring for Magic Link....See page 15.

How to operate this model.

-User's Guide: Magic Link Hardware....See page 16.

-Read This First: Preparing Magic Link & Beginning Magic Link....See page 7.

Troubleshooting.

-User's Guide: Troubleshooting....See page 23.

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# Magic Link

## What is your Magic Link?

Your **Magic Link** is a communicator. It lets you send messages—simple text or sound, animations, and graphics—to people around the world through electronic services including **AT&T PersonaLink**, **America Online**, and also by **fax**.

Your Magic Link can help you to maintain contacts, keep track of your appointments, and organize everyday information. With your Magic Link, you'll be able to use new information services: it will help you keep constant track of facts and knowledge expressly tailored to your interests.

Your Magic Link uses a technology called **Magic Cap**. Magic Cap is a platform for communication made by General Magic. Magic Cap manages everything that your Magic Link does: it lets you send and receive messages, make phone calls, and use electronic mail services. Magic Cap also makes it possible for your Magic Link to use packages created by many different companies. Some of those packages are built into your Magic Link.

### Important

It is good housekeeping practice to periodically backup your data from your Magic Link, as you would with a desktop or portable computer. We recommend the use of either the optional Magic Link memory card, model PICP-SR series, or the Magic Link optional computer connectivity pack (as appropriate).

## What are electronic mail services?

Electronic mail services let people send messages to each other. These messages can be long or short, personal or public, formal or just friendly. They travel quickly to their destinations, whether across town or across an ocean. There are already millions of people who use electronic mail for fun, for work, for school, and to keep up with their families. Using your Magic Link and a mail service, you can communicate with virtually everybody.

Your Magic Link comes ready to help you sign up for two mail services. These services are each explained in the guide books packed with your Magic Link. Using either service is simple:

**Sign up** to use America Online or Personalink. You need to follow the instructions for signing up. When you sign up, you agree to pay for using the service, just as you pay monthly bills for your telephone service.

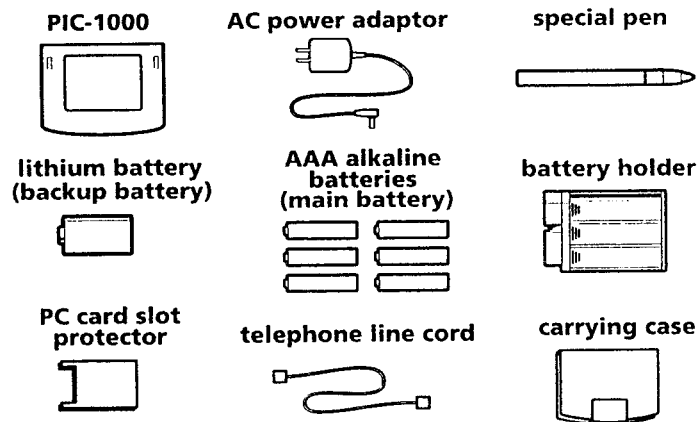
**Send and receive messages** through the service that you've joined. Both services give you a way to send messages to many people in many places across North America and around the world.

*instructions for Getting Started, p. 14*

*See also the guide book, AT&T PersonaLink Services User's Guide  
and AMERICA Online ID Brochure*

## What's in the package?

Carefully remove your Magic Link (PIC-1000) and accessories from the package. If any of the following is missing, contact your local Sony dealer.



### four guide books:

Read This First contains basic instructions for getting started with your Magic Link.

User's Guide contains step-by-step instructions for using the features of your Magic Link.

AT&T Personalink Services User's Guide describes all about Personalink services. Once you've signed up with an enhanced messaging service like AT&T Personalink Mail, you can customize your mailbox and use new services. Instructions for using AT&T Personalink are in the *User's Guide*.

PenCell User's Guide provides detailed instructions for using your Magic Link's built-in spreadsheet package, PenCell.

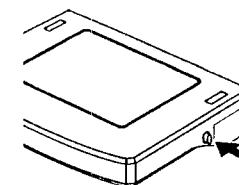
### other documents:

LIMITED WARRANTY  
CUSTOMER INQUIRY CARD  
LICENSE AGREEMENT  
AMERICA Online ID Brochure

## Remove and insert the special pen

Push the pen and pull it out from the pen holder.

To put it away, insert it into the pen holder and push the pen with your finger.

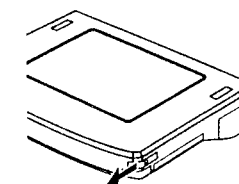


### Important

Use this special pen or your finger for operation your Magic Link. If using others, the touch screen might be scratched.

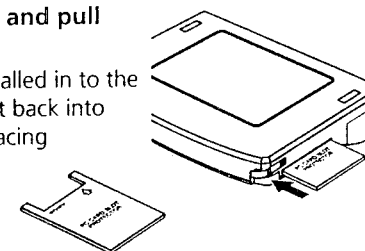
## Remove and insert the PC card slot protector

1 Set the LOCK switch to RELEASE.



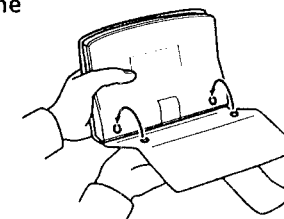
2 Press the EJECT button and pull out the protector.

Check the protector is installed in to the PC card slot. Then, push it back into the card slot, arrow-side facing upwards, to keep the card slot from dust.



## Put the soft case on your Magic Link

After installing batteries, put the soft case on the Magic Link to protect the casing.



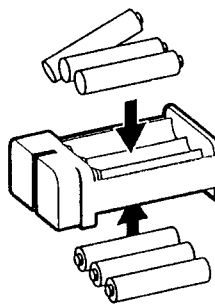
Installing batteries, p.8

# Installing batteries

Magic Link uses two kinds of batteries. The main battery consists of six alkaline batteries; this is the primary main power source. The backup battery only works to preserve information if the main battery runs down and while you change the main battery. Before you use your Magic Link, you'll have to put the batteries inside. Follow the instructions below.

## Install the main and backup batteries

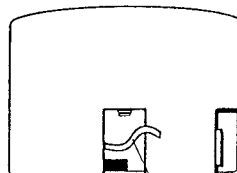
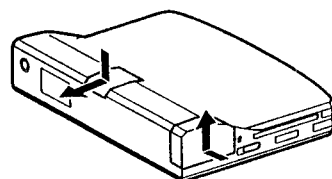
- 1 Insert 6 supplied alkaline batteries into each side of the supplied battery holder. Make sure that the batteries are facing the correct directions.



- 2 Remove the main and backup battery compartment lids by sliding them up, as shown.

A plastic tab prevents you from inserting and removing the backup battery when the main battery is not inserted.

Use the plastic ribbon to remove the backup battery.



plastic tab

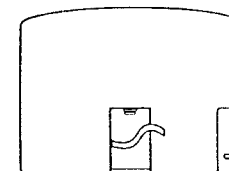
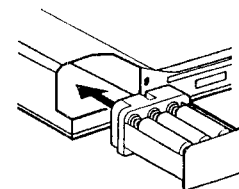
plastic ribbon

- 3 Insert the main battery and replace the compartment lid.

You can also use Sony rechargeable batteries, model number NP-500 or NP-500H, in place of the alkaline batteries and the holder.

*rechargeable battery, User's Guide p. 178*

Inserting the main battery pushes the plastic tab back into your Magic Link so that you can install the backup battery.

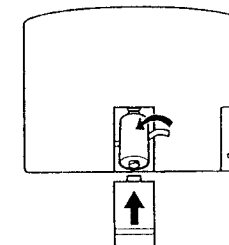


- 4 Insert the backup battery in the direction shown and replace the lid securely.

Place the backup battery on the plastic ribbon. Use this plastic ribbon to remove the backup battery.

You should insert the backup battery after you put in the main battery.

*backup battery, User's Guide p. 180*



### Your Magic Link must always have a power supply!

Your Magic Link needs to have a charged battery or fresh alkaline batteries (use only regular size 6AAA, batteries) at all times to preserve your information. Although the backup battery is primarily an emergency power source, it's important that the backup battery is always present. In particular, whenever you remove the main battery—even just for a second—the backup battery should be in place.

When replacing the backup battery, be sure to supply power to your Magic Link by one of the following methods. Otherwise information stored in the memory will be lost.

- Connect your Magic Link to an AC outlet with the AC power adaptor

or

- Install fresh alkaline batteries or a fully charged battery pack

### Estimated alkaline battery life

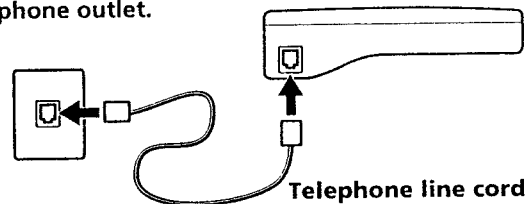
With fresh alkaline batteries, your Magic Link will run up to 5 hours in normal operation.

## Connecting to a phone line

You need to connect your Magic Link to a phone line when you want to sign up for a communication service, send or receive messages, or make a phone call.

### Connect to a telephone line

- 1 Plug one end of the supplied telephone line cord into the TEL LINE jack.
- 2 Plug the other end into a modular-type telephone outlet.



#### Notes

If your telephone outlet is not a standard modular type, the line cord will not fit. Purchase a modular adaptor or contact your telephone company for assistance.

## Preparing Magic Link

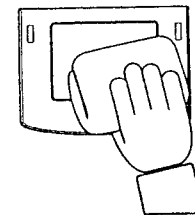
Before turning on your Magic Link, make sure its screen is free of dust or dirt; otherwise the screen could be scratched when you touch it using its special pen.

After turning on your Magic Link, adjust the screen contrast and align the touch screen.

### Clean the screen and special pen

If the screen is dusty or smudged, wipe it with a clean, lint-free cloth. Remember to clean the tip of the special pen, too.

Be sure to turn off the Magic Link before you wipe the screen.



### Switch your Magic Link on and off

Make sure to replace the main battery compartment lid, slide the POWER switch and let go.

When the main battery compartment lid is not closed, the Magic Link doesn't work. Replace the lid properly.

Slide the POWER switch again to switch your Magic Link off.



#### Automatic save

The changes that you make are automatically saved when you switch your Magic Link off. However, if you do something that you'd like to undo you can use the *revert* feature to throw away recent changes.

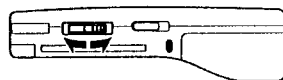
*undo the changes you've just made, User's Guide p. 163*

#### Automatic shut-off

If you do not touch your Magic Link for 5 minutes while it is on and not communicating, it will switch itself off. You can adjust it so that shuts off anywhere between 1-60 minutes.

## Adjust screen contrast

If nothing shows up, adjust the screen contrast by rotating the CONTRAST knob on the side of your Magic Link.



## Align the touch screen

Use only the supplied special pen to do the following operation. The special pen is inserted in the pen holder of the Magic Link.

*What's in the package, p. 6*

### 1 Touch the Magic Link's screen.

After turning on your Magic Link at the very first time, words appear on the screen instructing you to touch it in order to begin. When you touch the screen, a screen-adjustment target appears.



### 2 Touch the center of the target.

For accuracy, use the special pen that came with your Magic Link.



### 3 More targets will appear. Touch the center of each target.

Once you've touched the third target, your Magic Link is properly calibrated.

#### Re-aligning

Ordinarily, you only need to align the screen once, at the beginning of usage. If you think that the screen is not responding accurately to your touch, try re-aligning by following the instructions in the *User's Guide*.  
*repeat touch-screen adjustment, User's Guide p. 119*

## Always check remaining battery power

The battery power gauge at the top of screen indicates the current battery level.



Touch the battery power gauge on the screen to check its meaning.

### Important

- Turn off the Magic Link before removing the main battery or unplugging the AC power adaptor.

*Backup battery, User's Guide p. 180*

- Use only your finger or the special pen provided to operate the touch screen. Other pens and instruments might scratch the screen.
- When the main battery is running down, your Magic Link will automatically shut down so that it can conserve enough power to preserve the addresses, telephone numbers, and other information as much as possible.

*Alkaline batteries, User's Guide p. 176*

*Rechargeable battery, User's Guide p. 178*



# Beginning Magic Link: the *Getting Started* book

You can learn how to use your Magic Link works by going through *Getting Started*. The *Getting Started* book is in your Magic Link.

By completing the lessons in the *Getting Started* book, you will personalize your Magic Link and be signed up with a communication service. And then you can start sending messages using your Magic Link.

*AT&T Personalink Center, User's Guide p. 132*

## Lessons

The *Getting Started* book in your Magic Link's library contains 11 brief lessons that explain some important features of your Magic Link.

You can skip and repeat the lessons if you want, and you can retry them again and again later.

**How to use this book** Learn how to work with the rectangular windows that appear on the screen to present you with information or offer choices.

**About the top of the screen** Learn about the information and controls presented at the top of the screen.

**About the bottom of the screen** Learn about each of the seven buttons along the bottom of the screen.

**Using the keyboard** Use your Magic Link's on-screen keyboard to type letters and punctuation.

**Set the time and date** Set the Magic Link's clock and calender to the current time and date.

**Add your name card** Enter your address and telephone number to personalize your Magic Link. You can also begin using your Magic Link without personalizing. It will request the information when it needs to be personalized.

### Your name appears on messages and faxes you send

The lesson shows you how to personalize by creating a name card for yourself.

*see also: create a new name card, User's Guide p. 32*

**Where are you calling from?** You need to tell your Magic Link where you are calling from—the area code and if you need to dial a 9 for an outside line—so that it can dial the phone number correctly to send and receive messages and to send faxes.

**Sign up for the AT&T Personalink Mail service** Follow instructions by reading the message from AT&T in your In box. You'll get to sign up for a communications service so that you can exchange messages with other people. You can use your Magic Link without signing up, but you will only be able to send fax messages.

**Add your signature** Once you've signed your name, you can use your signature to personalize messages you send. Once added, your formal and informal signatures will be available in the stamper at the bottom of the screen when you're editing messages.

**Send a message** Prepare and address a message to someone you know. If your friend already has a equipment capable of electronic messaging, such as another Magic Link or a fax machine, you can send the message.

**Phone someone you know** Use the phone features of the Magic Link to make a telephone call, providing your Magic Link is connected to a phone line and you have the optional Magic Link headset.

## Begin the lessons

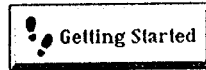
- 1 At the Desk, touch the circled ? in the top-left corner of the screen.

A rectangular window containing information about your Magic Link appears.



- 2 Touch *Getting Started* in the window.

This starts the first lesson, leading you from the Desk into the Library, where you'll find the *Getting Started* book.



- 3 Touch the *Getting Started* book on top the card catalog.

The book opens to the first page.



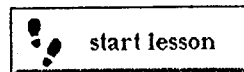
- 4 After reading the introductory page, touch the folded page corner near the top right of the screen.

The page turns to the first lesson.



- 5 Touch *start lesson* on the right-hand page.

This begins the first lesson.



- 6 Follow the instructions as they appear on the screen.

- 7 After each lesson, touch the folded page corner to go on to the next lesson.



Check the dialing system of your phone line—tone or pulse  
If your call cannot be connected, you may have to set your Magic Link to *pulse dialing* in the *phone set up*.

*pulse dialing, User's Guide p. 53*

## Restart the lessons

If you stop a lesson in the middle and want to restart, return to the Desk by touching the desk in the bottom-left corner of the screen.

Now follow from step 1 of "Begin the lessons."

# Personalizing

By personalizing your Magic Link, you tell it your name so that your name appears on messages and faxes you send. You can personalize your Magic Link by following the lessons described on the last two pages. You can also personalize by following the steps below.

## Important

If you sign up for AT&T PersonalLink, your name, the addresses, and the numbers on your own name card will be available to other PersonalLink customers in the PersonalLink directory. Your name card also travels with your messages when you send them.

## Personalize without lessons

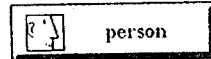
- 1 At the desk, touch the name card collection.



- 2 Touch *new*.

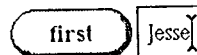


- 3 Touch *person*.



- 4 Type your given name on the *first* line.

If you want to use a middle name, initial, or given names, type them with your first name.

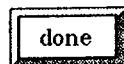


- 5 Touch *last*.

The typing point will move to the *last* line.



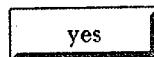
- 6 Type your last name.



- 7 Touch *done*.

- 8 Touch *yes* when you're asked if you want to personalize.

When you add a new name, you will be asked if you want to personalize, as long as you haven't personalized already.



# Sending a fax

You can use your Magic Link to fax a message to anyone who has a fax machine.

## Create and fax a message

- 1 Touch the desk in the bottom-left corner of the screen to return to the desk.



- 2 Touch the postcard in the center of the screen.



A new message card is created.

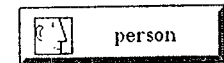
- 3 Touch *new*.

A new name card will be created.



- 4 Touch *person*.

You're addressing the new message to a person. A window appears containing spaces for the person's name.



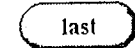
- 5 Type the person's first name.

The letters that you type appear at the small, vertical typing mark



- 6 Touch *last*.

The typing mark moves into the last name space.

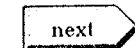


- 7 Type the person's last name.

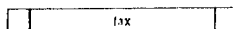


- 8 Touch *next*.

You have finished typing the name. The next step appears.



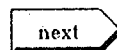
- 9 You now need to choose *fax* for the way your message is sent. Touch the small right arrow until *fax* appears.



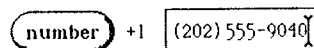
If *fax* appears already, go on to step 10.

- 10 Touch *next*.

The next step appears.

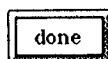


- 11 Type the fax number.



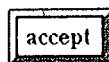
- 12 Touch *done*.

You have finished entering the name and fax number.



- 13 Touch *accept*.

This accepts your choice of the new person whose fax number you've typed.



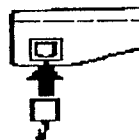
- 14 Write a brief message.

Use the special pen that came with your Magic Link to write a note on the left side of the postcard. Your note might say something like *I'm faxing with my Magic Link*.

Dear Matthew,

*Just the fax*

- 15 When you're ready to send, connect to a phone line.



- 16 Touch *send*.

If you haven't yet connected to a phone line, the message will be held in your out box until you do.



### Faxes are personalized

Your name, the date, and the time are printed on the top of faxes that you send. When you personalize your Magic Link, you add your name.

7/4/94 4:55 a.m.

Jusse Auspitz

page 1 of 2

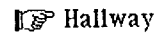
# Moving around

The Magic Link has a geography modeled on that of the world, with rooms and buildings. When you first turn on your Magic Link, you're looking at your Desk. This desk is your home base, from which to start out on any Magic Link task. To perform different activities in the world, move among the places in its world.

## Go to the Hallway

At the Desk, touch the pointing hand in the top-right corner of the screen.

Move along it by touching the arrows on the floor. If you see a door with the room name, go ahead and touch the door.



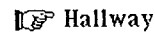
Hallway

## Enter a room

Touch the door to enter the room.

There is always the name of a place in the top-left corner of the screen.

Touch the hand to return to the hallway.



Hallway

## Go downtown

In the hallway, touch the pointing hand in the top-right corner of the screen.



Downtown

## Return to the Desk

Touch the picture of the desk in the bottom-left corner of the screen to return to the Desk at any time.



## If you ever get lost

Touch the Desk to return there.



## Ask for a scene description

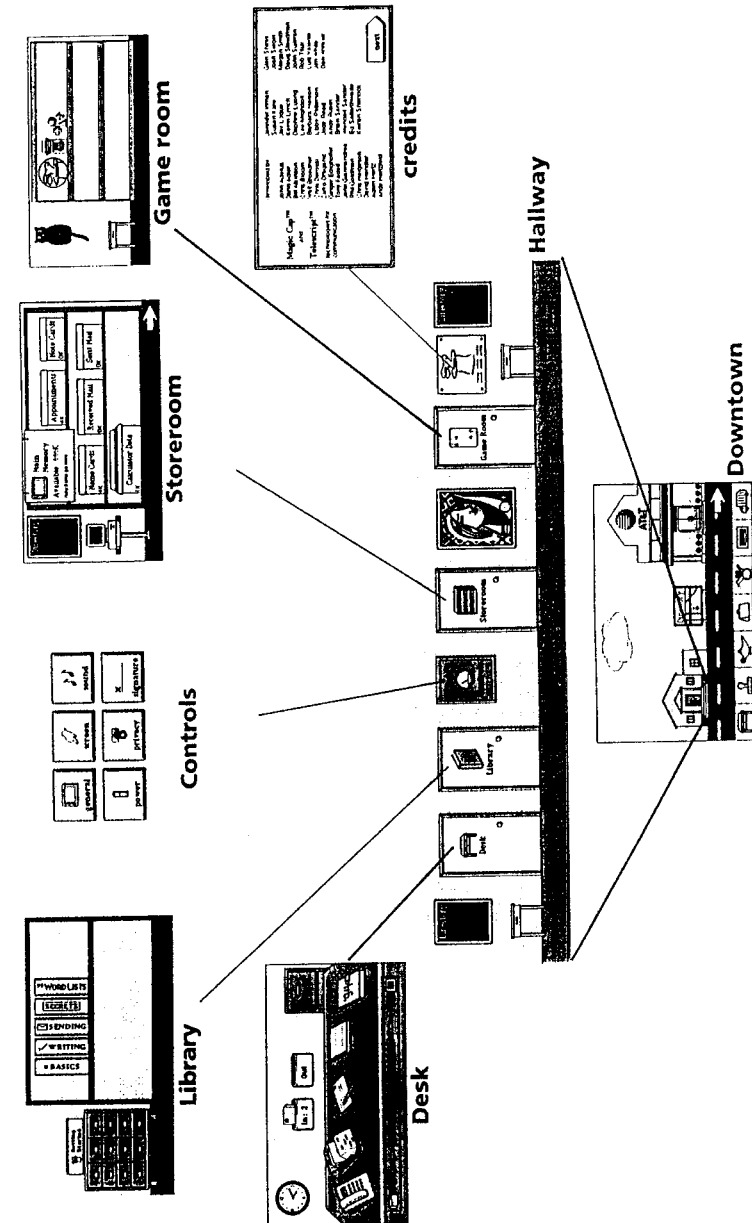
Touch the question mark in the top-left corner of the screen.

A brief description appears.

Touch the x in its top-right corner to make the description disappear.



Desk



# BASICS

Once you've installed the size AAA batteries or connected to AC outlet with the supplied AC power adaptor, you're ready to go. If you've installed a rechargeable battery (NP-500 or NP-500H, not supplied), you'll probably want to keep the Magic Link plugged in until the battery is charged. But you can begin exploring the Magic Link's universe of places and sending messages straight away.

## Magic Link basics

- **Touch the desk in the bottom-left corner of the screen.**

You can always return to the Desk by touching this button. If you ever feel "lost," touch here to return to the Desk.



- **Touch an object on the screen with the supplied special pen or your finger when you want an object to do something.**

Most objects on the screen do something when you *touch* them. Be sure to use your finger or the supplied special pen so that you don't damage the screen.

- **Press down on an object and slide your finger across the screen.**

Make some objects *move* by sliding them to the position you want, and letting go.



- **Touch the tool holder at the bottom of the screen to choose writing implements.**

You can draw or write on the screen. Many places—the blank area of messages, pages in the notebook—are ready for writing and drawing.



- **Type using the keyboard.**

Make the keyboard appear by touching the small keyboard at the bottom of the screen.



- **Make a window disappear by touching the x in its top-right corner.**

The keyboard has its x on the bottom right.



- **Touch the question mark beside the name of a scene or window to see more information about it.**

The name in the top left corner of the screen is the name of the current scene.



- **Touch the pointing hand or the scene name in the top-right corner of the screen to go to that scene.**

There is always the name of a scene in the top-right corner of the screen, with a hand pointing at the name. Touch the hand to go to the scene named.



- **Arrows mean *there's more here*.**

Arrows on the hallway floor and on the street downtown show that the hallway and screen continue. Arrows on a name card point to additional information on that card. Touch an arrow to show what else is there.



- **Touch enclosed messages to see their contents.**

A small card or envelope is an entire message. Touch the small message to see the message in full.



To America Online



## Moving around

Your Magic Link has a geography modelled on that of the world, with rooms along hallways and buildings along a street. To perform different activities in the world, you move from place to place. Similarly, to do different things with your Magic Link, you'll move among the places in its world.

### Go to a place

Touch the pointing hand or place name in the top-right corner of the screen to go to that place.



### Go to the Desk

Touch the desk in the bottom left corner of the screen to return to the Desk at any time.



There are other rooms in your Magic Link geography and even other buildings. You enter rooms through doors. Just touch a door to go into the room behind it. Each of the Magic Link rooms is a complete place appropriate for certain activities. The room for books, for example, is called the Library.

### Ask for a scene description

- 1 Touch the question mark or the place's name in the top-left corner of the screen.

A brief description appears.



- 2 Touch the x in the top-right corner of the scene's description to make the description window disappear.

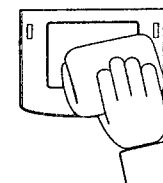


## Caring for Magic Link

For best results, follow these simple maintenance procedures below.

### Before turning on your Magic Link each day

**Clean the screen and the special pen.** The touch screen is extremely sensitive. Wipe the screen and the tip of the special pen with a soft cloth or tissue daily before you use your Magic Link to avoid scratches and damages to the screen.



**Check the main battery level.** When the main battery level is low, change the batteries to fresh alkaline batteries or a fully charged rechargeable battery pack (NP-500 OR NP-500H), or charge the rechargeable battery using the AC power adaptor. You can use your Magic Link while charging the rechargeable battery pack.

*Check battery levels, p. 174*

### After using the Magic Link each day

**Charge the battery pack.** When you use your Magic Link with an optional rechargeable battery pack, recharge it daily using the AC power adaptor. The Magic Link will not operate when the battery is very low.

*Rechargeable battery, p. 178*

### Carrying around

Put your Magic Link in the supplied carrying case when carrying it to protect the touch screen.

### Keeping your Magic Link in good condition

Use the supplied special pen for operation. Do not use other implements, otherwise your Magic Link's touch screen might be scratched. If the touch screen is scratched, repair service will require payment even during the warranty period.

**Do not place anything on your Magic Link, drop it, or hit it with excessive force.** Placing objects, such as a book, or resting your elbow on your Magic Link will damage it.

**Do not use the supplied special pen if it is broken or damaged,** otherwise your Magic Link's touch screen will be scratched. If the supplied special pen breaks and needs to be replaced, contact your Sony service center.

**Do not put anything in the DC IN 12V jack** other than the power adaptor plug.

**Do not connect to multiple lines or a PBX.** Your Magic Link is designed and approved for a single-party lines only.

**Do not wrap the Magic Link** in a cloth, blanket, or other material when it is connected to the AC power adaptor. If you do so, the increased temperature could cause malfunctions or accidents.

**The bottom of your Magic Link and its AC adaptor might get warm.** This is not a malfunction. However, if the AC power adaptor gets excessively hot, disconnect it and have it checked by your Sony dealer or service center.

**If you expose your Magic Link to the conditions below, your Magic Link may malfunction.**

- |   |  |
|---|--|
| - heat sources such as radiators or air ducts           | - ambient temperature of more than 40°C (104°F) or less than 0°C (32°F). At low temperatures, the screen may be dark or unclear. The screen will return to normal under normal temperatures. |
| - direct sunlight                                       |  |
| - excessive dust  |  |
| - moisture or rain                                      |  |
| - mechanical vibration or shock                         |  |
| - the heat of a dashboard or of a car parked in the sun | - high humidity  |
| - strong magnets or speakers                            |  |

**Do not let anything fall or spill onto your Magic Link.** If this should accidentally happen, disconnect the power source and have it checked by qualified personnel before operating it further.

**Only use the recommended power sources:** AAA alkaline batteries, a rechargeable battery pack, or the supplied AC power adaptor.

**Use only the AC power adaptor supplied.** Any other power adaptor may cause malfunction.

**Be sure to disconnect the AC power adaptor** from your Magic Link when it is not to be used for a long time.

**Pull on the plug, not the cord** to unplug the AC adaptor.

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## MAGIC LINK HARDWARE

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If you have any questions or problems concerning your Magic Link, contact your nearest Sony dealer.

### For best viewing

For best visibility, use your Magic Link in a bright place.

### For left-handed people

Your Magic Link is designed for easy holding and operation using either the right or left hand. If you are left-handed, hold your Magic Link by its right edge and use your left hand to touch the screen.



# Batteries and power

You can power your Magic Link using the following accessories:

- 6 AAA alkaline batteries  
Use only regular, single use alkaline batteries.
- AC power adaptor, model AC-PIC1000
- Rechargeable battery pack, model NP-500 or NP-500H (not supplied)

## Main battery life (estimated)

Battery type	Battery life
Alkaline batteries (6) (Sony AAA alkaline)	about 5 hours in normal operation about 13 hours when remaining idle
Rechargeable battery pack (NP-500)	about 10 hours in normal operation about 15 hours when remaining idle
Rechargeable battery pack (NP-500H)	about 12 hours in normal operation about 18 hours when remaining idle

## Backup battery life (estimated)

Battery type	Battery life
Lithium battery (CR123A or DL123A)	about 9 months (with no main battery)

When the main battery is installed, the main battery saves the memory instead of the backup battery.

### Notes on battery life


- When the main batteries are discharged, the message *"Battery power is getting low"* appears. When this appears, replace with fresh alkaline batteries, or recharge the optional rechargeable battery using the supplied AC power adaptor.
- If the batteries are completely discharged, the message *"Battery power is nearly out"* appears, and your Magic Link automatically shuts off in a few seconds.

- The battery life estimates are for use in temperatures under 77°F (25°C).
- The battery life is only approximate due to the affect of temperature, usage, etc.
- In low ambient temperatures, main batteries discharge faster.
- Certain functions, such as sending messages or recording voice messages, cause the batteries to consume more power.
- Using a feature may sometimes cause a temporary drop in voltage and the message "Battery power is low" may be displayed.

Ordinarily, the battery level is displayed at the top of the screen. There is a complete control panel for monitoring the battery in your Magic Link. This Control Panel is located behind the control panels door in the Hallway.

## Check battery levels

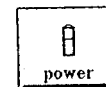
1 From the Desk, touch *Hallway*.

 Hallway


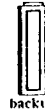
2 Touch the control panels door.




3 Touch *power*.



Battery levels are displayed here.

batteries:  

shut off automatically: ☒ after  minutes idle  
☐ even when plugged in

card battery: 

Use this to control for automatic shut-off. This will effect how your batteries are consumed.

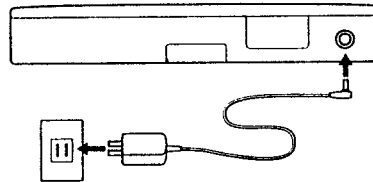
Some PC and memory cards contain batteries. The card battery level is displayed here.

## AC power adaptor

Use of AC power allows you to operate your Magic Link without running out of battery power. It's best to use the AC power adaptor whenever you can since it doesn't consume the power in your batteries.

### Connect the AC power adaptor

Use the AC power adaptor (supplied) to connect to an AC outlet.



By connecting your Magic Link to the AC, you can both operate the Magic Link and automatically recharge your rechargeable battery at the same time.

With the optional rechargeable battery pack, charging of the battery pack begins and finishes automatically.

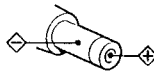
#### Estimated time to recharge batteries:

- about 6 hours when your Magic Link is power off.
- about 11 hours when your Magic Link is in use.

#### AC power adaptor

- When the AC power adaptor is not used, unplug it from the AC outlet.
- Use only the AC power adaptor supplied (AC-PIC1000). Do not use any other AC power adaptor.

#### Polarity of the plug



- Do not bend or crimp the connection cord, or place heavy objects on top of it. Damage to the cord may result in fire or electric shock.
- Do not use cut or damaged connection cords.
- When removing the AC adaptor from the outlet, pull the adaptor plug. Do not pull the cord.
- Do not wrap the AC power adaptor in a cloth, blanket, etc., when it is connected to AC outlet or your Magic Link.
- Connect the AC power adaptor to only a wall outlet. Any other AC outlet, such as a travel converter or DC-AC converter, may cause malfunctions or accidents.

## Alkaline batteries

**Battery type** 6 AAA alkaline dry batteries LR03

### To save power—alkaline batteries

Connect the supplied AC power adaptor to your Magic Link and the AC outlet. Magic Link will then use the power from the AC power adaptor. The alkaline batteries are not charged. When the message "Battery power is getting low" appears, change the used alkaline batteries to 6 fresh batteries.

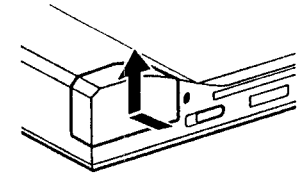
*Installing batteries, in the booklet - Read This First p. 8*

#### Notes

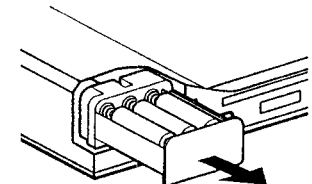
- Be sure to insert the batteries in the correct direction.
- The alkaline batteries are not rechargeable.
- Do not use a combination of fresh and used batteries.
- Do not use different types of batteries.
- Do not use size AAA rechargeable NiCd batteries.
- If you aren't using your Magic Link for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- The batteries are slowly discharged, even while not in use.

## Replace the alkaline batteries

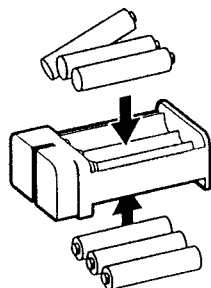
- 1 Remove the main battery compartment lid.



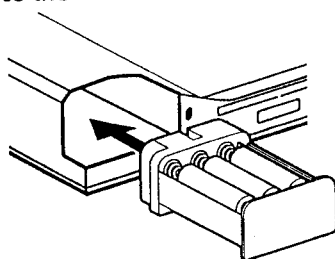
- 2 Remove the battery holder (PIC-BH1), and remove the 6 used alkaline batteries from the battery holder.



- 3** Insert 6 fresh alkaline batteries into the battery holder. Follow the markings on the holder to be sure the batteries are installed in the correct direction.



- 4** Insert the battery holder with fresh alkaline batteries and replace the lid.



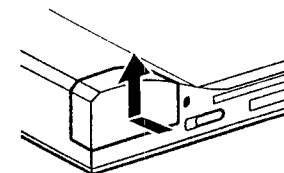
## Rechargeable battery

**Battery type** NP-500 or NP-500H (not supplied)

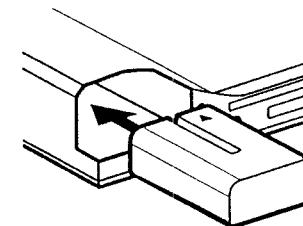
**To save power in the rechargeable battery**  
When you disconnect the AC power adaptor from your Magic Link, your Magic Link will use power from the main battery pack. When you use your Magic Link near the AC outlet, connect it to AC outlet with the supplied AC power adaptor AC-PIC1000 to save power and charge the battery.

### Insert the battery pack

- 1** Remove the main battery compartment lid.



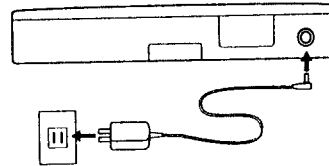
- 2** Insert a rechargeable battery (NP-500 or NP-500H) facing the correct direction and replace the lid.



## Charge the battery pack

- 1 Use the AC power adaptor AC-PIC1000 (supplied) to connect to an AC outlet.

Charging begins and finishes automatically.



- 2 When charging is done, usually takes about 6 hours, unplug the AC power adaptor.

### Notes on charging

- As soon as you connect your Magic Link to an AC outlet using the AC power adaptor, charging of the battery pack begins.
- You can use your Magic Link while the battery pack is being charged.
- Turning on the power does not interrupt the charging operation.
- While charging, the battery power gauge appears, but the amount indicated is only approximate due to the affect of temperature, usage, etc.

## Backup battery

The lithium backup battery keeps information in memory intact even when the main battery is low. Before you start to use your Magic Link, place the supplied lithium battery into the backup battery compartment. Note that you should install the main battery first.

*Installing batteries, in the booklet - Read This First p. 8*

**Battery type** CR123A or DL123A

### Caution

Use only a Sony CR123A or Duracell DL123A lithium battery.

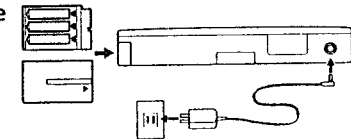
### Note

When a message appears on the screen that reads "Your Magic Link's backup battery is almost dead," replace the used lithium backup battery with a fresh one.

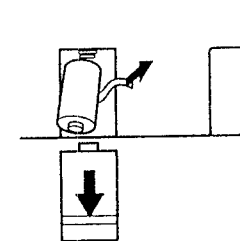
## Replace the lithium backup battery

- 1 Connect your Magic Link to an AC power outlet. And be sure to insert 6 fresh alkaline batteries or a fully charged battery pack or connect the supplied AC power adaptor; otherwise information stored in the Magic Link will be lost.

If your Magic Link does not contain a main battery, a plastic tab prevents you from removing the backup battery.



- 2 Remove the backup battery compartment lid and remove the used lithium battery.



- 3 Insert a fresh backup battery and replace the lid securely.

## PC cards

You can use optional PC cards with your Magic Link, including memory cards for saving information.

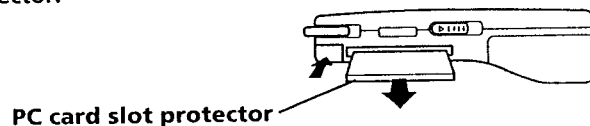
When using PC cards, remove the PC card slot protector first and insert the PC card before switching on your Magic Link.

### Insert a PC card

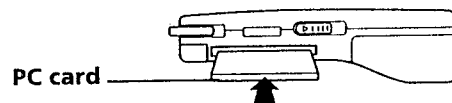
- 1 Turn your Magic Link off.
- 2 Set the LOCK switch to RELEASE.



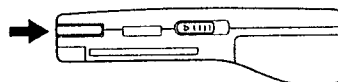
- 3 Press EJECT and pull out the protector.



- 4 Insert a PC card, label side up.

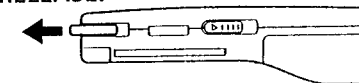


- 5 Set the LOCK switch to the lock position, and then switch your Magic Link on.

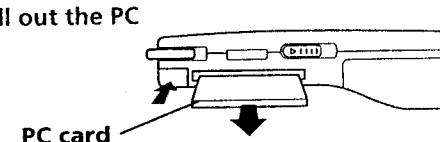


### Remove a PC card

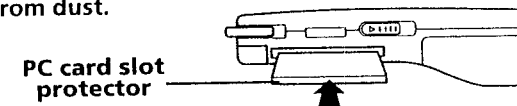
- 1 Turn off your Magic Link.
- 2 Move the LOCK switch to RELEASE.



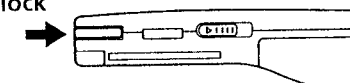
- 3 Press EJECT and pull out the PC card.



- 4 Insert the protector to protect your Magic Link from dust.



- 5 Set the LOCK switch to the lock position.



#### Notes on using PC cards

- Turn off your Magic Link when inserting and removing cards.
- Store cards in their plastic cases when not using them.
- Do not bend or drop cards.
- Do not expose cards to static electricity, heat, direct sunlight, moisture, or mechanical shock.
- Make a backup copy for all important data.
- Read the manual that comes with your PC card before use it.

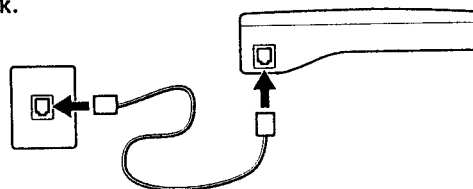
## Connecting to a phone line

In order to send and receive messages, your Magic Link needs to be connected to a standard phone line.

### Connect a phone line

Plug one end of the phone line cord that comes with your Magic Link into the TEL LINE jack.

Plug the other end into a telephone outlet.



#### Notes

- If your telephone outlet is not a modular type, the line cord will not fit; contact your telephone company for assistance.
- If your line uses tone dialing, your Magic Link should be able to dial immediately. If your line only uses pulse dialing, you must set your Magic Link to the dialing system of your phone line. Your line might use pulse dialing if you have telephones with round, rotary dials or you hear a long series of clicking sounds whenever you dial a number. The *tone/pulse* dial mode switch is in the setup area of the phone. Touch the phone on the desk, then setup, to get to the switch.

#### Important

- Your Magic Link will not work with party lines, cannot be connected to a coin-operated telephone, and may not work with a private branch exchange (PBX).
- If the telephone company makes a service call to your office and determines that your Magic Link is responsible for the problem, the telephone company may bill you for the service call. Also, if you do not disconnect your Magic Link when it is adversely affecting the telephone line, the telephone company has the right to disconnect your service temporarily until you correct the problem.

#### Telephone line problems

- If your telephone does not work, there may be a problem with your phone line. Disconnect your Magic Link to see if the problem goes away. If it does not, report the problems either to your local telephone company or to your company's telecommunications staff.
- If disconnecting the modem eliminates the problem, your Magic Link may need service.

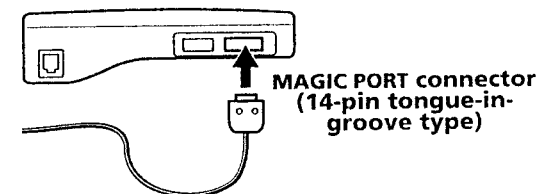
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## Interface cable

Your Magic Link has a Magic Port connector and Telecom connector on the left side. These connectors let you plug in external keyboards, and other accessories for your Magic Link all at once.

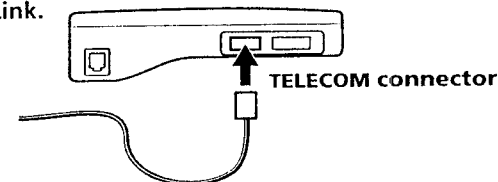
### Connect to MAGICPORT connector

- 1 Turn off the Magic Link power.
- 2 Pull down the TELECOM and MAGIC PORT connector cover on the side panel of the Magic Link.
- 3 Connect the cable for MAGIC PORT (not supplied) to the MAGIC PORT connector on the side panel of the Magic Link.



### Connect a TELECOM connector

- 1 Pull down the TELECOM and MAGICPORT connector cover on the side panel of the Magic Link.
- 2 Connect the cable for TELECOM port (not supplied) to the TELECOM connector on the side panel of the Magic Link.



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# Troubleshooting

Refer to the table below if you have problems with your Magic Link. If the problems continue, consult your nearest Sony dealer.

## Power

**Sliding on the POWER switch does not turn on your Magic Link.**

- The contrast is not set properly.
  - Adjust the screen contrast level by turning the contrast level on the side of your Magic Link.
- The alkaline batteries are dead.
  - Replace the dead batteries with 6 fresh alkaline batteries.
- The battery pack is discharged.
  - Recharge the battery pack or replace with a fully charged battery pack.
- The AC power adaptor is not connected properly to an AC outlet.
  - Plug in the AC adaptor.
- The wrong type of adaptor is being used.
  - Use only the supplied AC power adaptor.
- The main battery compartment is not closed.
  - Replace the battery compartment lid properly.
- The batteries are not inserted correctly in their holder.
  - Insert a battery pack or the battery holder with 6 alkaline batteries into the main battery compartment aligned as marked on the holder.
- You're switching on the POWER switch too often. Your Magic Link needs time to turn on.
  - Wait a few seconds for the screen to appear after slide on the POWER switch.

*Batteries and power, p.173*

**The rechargeable battery pack is not charging.**

- Use the supplied AC power adaptor.
- Connect the AC power adaptor to an AC outlet.
- The alkaline batteries are inserted or no battery is inserted.
  - Insert the rechargeable battery pack into the main battery compartment.

*Batteries and power, p.173*

**The battery life of the rechargeable battery pack is short.**

- Replace the battery pack with a new one.

## Screen

**When you turn on the power, the screen appears black.**

- Adjust the screen contrast level.

**The screen is damaged.**

- Contact your nearest Sony dealer if the screen is permanently damaged. The screen can be repaired or replaced for a fee.

*Caring for Magic Link, p.12*

## Speaker and sound

**Reminder alarms do not sound at the preset time.**

- The alarm is not set correctly.
- Your Magic Link volume is set too low.
- The daylight saving (summer) time setting is incorrect.

*Control panels, p.117*

*Clock and calendar, p.38*

**The reminder alarm cannot be heard from the speaker.**

- Adjust the volume control.

*Control panels, p.117*

**Voice mail cannot be heard from speaker.**

- Adjust the volume control.

*Control panels, p.117*

## General operations

**You cannot activate a function shown on the screen.**

- Remove the PC card and insert it in firmly.

*PC cards, p.181*

- Reset your Magic Link by pressing the small RESET switch with a pointed article such as a pen tip on the bottom of the set, using a bent paper clip.

**The function activated is not the one you touch with the supplied special pen.**

- You might be touching the screen with your hand while touching with the supplied special pen.
  - Be sure to touch the screen in only one place at a time.
- Align the touch screen again.

*Repeat touch-screen adjustment, p.119*

**The location touched by the supplied special pen differs from that shown on the screen.**

- Align the touch screen.

*Repeat touch-screen adjustment, p.119*

**The information in your Magic Link disappears.**

- The lithium backup battery is dead.
  - Replace the used lithium backup battery about once every year.

*Backup battery, p.180*

**You forget your password.**

- For Magic Link
  - Contact Sony customer support at 1-(800)-556-2442.
- For America Online
  - Contact the customer service department at 1-(800)-827-6364.

**Phone operation**

**No dial tone.**

- Plug the telephone line cord securely into the telephone line jack.

*Connecting to a phone line, p.183*

- You choose the option "service dialing audible" in the control panel.
  - Go to the control panel in the Hallway and touch *general* on the control panel. And then touch "service dialing audible" to cancel it.
- The dial tone volume is off.
  - The Phone status window appears every time you call somebody. Adjust the volume level here.

**You are connected to the wrong number or not connected at all even though you dialed correctly.**

- Go to phone set up and:
  - check that the tone/pulse selector setting is correct.
  - select the place where you are currently dialing from.

*Phone setup, p. 53*

**Phone calls do not connect.**

- Your Magic Link is not connected to a telephone outlet.
- Your Magic Link is set to the wrong dialing system.

*Connecting to a phone line, p.183*

- You are dialing out via a PBX which does not work with your Magic Link.

**The redial function does not work.**

- Check if the last number you dialed was more than 11 digits long.
- Check to see if the number you intended to call was really the last number you dialed.

**The memory function does not work.**

- Check to see if the phone number is correctly programmed for the one-touch dialing or the speed dialing location.
- Program the desired phone number once more.

**You cannot program a phone number.**

- Recheck to follow the programming procedures correctly.

**On fax transmission**

**You cannot send a fax.**

- The fax machine you're trying to reach is out of paper or not working.
- You have connected to a wrong number.
  - Check the number.
- Send the fax again, or consult your telephone company if you find an error occurs on your telephone line by dialing with another telephone.

**Beaming**

**The AV remote does not work.**

- The audio/video equipment does not carry a Sony IR mark.
- Make sure your Magic Link is within 25 ft (7 m) of the audio/video equipment.



- There is an object between your Magic Link and the audio/video equipment.

*AV remote, p. 108*

- The beam lens is dirty.
  - Clean it with a soft cloth.

*Caring for Magic Link, p. 12*

- This AV remote does not work with some Sony devices.
- The setting on your Magic Link does not match that of the device.
  - Check the setting.

*AV remote, p. 108*

- Keep your Magic Link away from direct sunlight or very bright lights.
- Make sure no other AV remote control is being used nearby.

#### **Data beaming does not work.**

- Make sure the two Magic Link Beam lenses are pointed directly at one another and less than 5 ft (1.5 m) apart.
- Make sure there is no obstruction between the lenses.

*AV remote, p. 108*

#### **PC cards**

##### **You cannot insert a PC card into your Magic Link.**

- The LOCK switch is not set to *the release position*.
- The card is of a non-standard type.

##### **You cannot remove a PC card from your Magic Link.**

- Set the LOCK switch to *Release*.

*PC cards, p. 181*

##### **You cannot read from or write to a PC card.**

- Read the PC card's documentation and make sure the card is supported by your Magic Link.
- Set the LOCK switch to Release, remove the card fully, then insert the card again.

#### **Your Magic Link unit**

##### **Your Magic Link becomes excessively hot.**

- Remove the AC power adaptor and the rechargeable battery pack, then have the unit checked by your nearest Sony dealer.

## **IMPORTANT INSTRUCTIONS TO USERS**

Your PIC-1000 has been approved by the Federal Communications Commission (FCC) as not being harmful to the telephone network when connected directly to the telephone lines. In order to fully comply with the Rules of the FCC, the following instructions should be read carefully and followed completely where applicable:

- 1 The FCC Rules require that all direct connection to the telephone lines must be made through standard plugs and jacks. No connection can be made to party lines or coin lines. Prior to connecting your device to the lines:
  - a) Upon request from your telephone company, you must provide the 14 digit FCC Registration Number and Ringer Equivalence Number (REN), both of which are on a label located on an outer surface of the device.
  - b) After the telephone company has installed the jack, you can connect your telephone by inserting the mating plug of your equipment into this jack.
  - c) All repairs must be accomplished as described in the "Service requirements."
  - d) The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five(5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should call your local telephone company to determine the maximum REN for your calling area.
  - e) The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your Magic Link, you should complete the steps in the booklet, *Read This First*, on page 18.

- 2 If it appears that your PIC-1000 is malfunctioning, it should be disconnected from the telephone line until it can be determined whether your PIC-1000 is the source of the trouble or not. If your machine needs repair, it should not be reconnected until such repairs have been made.

3 If harm does occur, the telephone company shall, where practicable, notify you, the customer, that temporary discontinuance of service may be required; however, where prior notice is not practical, the telephone company may temporarily discontinue service forthwith, if such action is reasonable in circumstances. In case of such temporary discontinuance, the telephone company shall (1) promptly notify you, the customer, of such temporary discontinuance (2) afford you, the customer, the opportunity to correct the situation which gave rise to the temporary discontinuance, and (3) inform you, the customer, of your right to bring a complaint to the Commission pursuant the procedures set forth in the Rules. Procedures for filling the complaints can be obtained from your local dealer, or if necessary, by writing directly to the manufacturer.

## SERVICE REQUIREMENTS

If the PIC-1000 should malfunction, all repairs will be performed by an authorized Sony representative. This unit has been registered with the FCC for direct connection to the telephone network. Under the FCC program, no customer is authorized to repair this unit. This applies to a unit both in and out of warranty. If an unauthorized repair is performed, the registration of the unit for direct connection to the network will be null and void. If the unit is still in warranty, the remainder of the warranty period will also be null and void.

It is the responsibility of users requiring service to report the need for service to their Sony dealer.

## Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

## Note on the AC power adaptor

For AC operation, use the AC power adaptor recommended for this unit. Do not use any other AC power adaptor.

## Warning

Lithium Battery may explode if mistreated.  
Do not recharge, disassemble or dispose of in fire.

Replace the battery with a Sony CR123A or Duracell DL123A lithium battery. Use of another battery may present a risk of fire or explosion.

## DISPOSAL OF LITHIUM ION BATTERY

### LITHIUM ION BATTERY. DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center.

**Note:** In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you, call 1-800-55-MAGIC or 1-800-566-2442 (United States only)

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Intuit Inc.

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## SECTION 2

### ROM DIAGNOSTICS

#### 1. Before you start

ROM diagnostics is the special program for Sony personal intelligent communicator, PIC-1000, that can save data in the device memory and restore it, or diagnose the LCD/Touch screen hardware. The program is intended only for service personnel use. The diagnostics does not use any user interface of MagicCap. And it needs special operations to run as described in the next section.

Before you start to run the diagnostics, you need to prepare :

- (1) 1MB SRAM card (Sony PICP-SR1)
- (2) AC adaptor for PIC-1000 (AC-PIC1000)

**NOTE1:** The SRAM card should not be formatted by MagicCap. The data in the card will be overwritten and MagicCap may not boot correctly with the card that is overwritten by ROM diagnostics.

**NOTE2:** Do not use any other card than Sony SRAM card. The ROM diagnostics does not work if you use any other card than the SRAM card. (Flash card, Pager card etc.)

**NOTE3:** Before you try to run the ROM diagnostics, you should power on the unit once and see if the unit could power up. If the unit does not boot, the hardware may be in an unknown state for some software reason, or it may have some kind of a hardware problem.

#### 2. How to enter ROM diagnostics mode

The ROM diagnostics consists of two parts; One is the backup/restore program to save user data, and the other is the diagnostics for LCD and touch screen hardware. Each program runs separately.

Since the ROM diagnostics should not be used for general users, the way to enter the diagnostics is complicated.

You need to satisfy the conditions and do the operations below to run **Backup/Restore program**.

**Condition-1.** Plug in the AC adaptor.

**Condition-2.** SRAM card is inserted into the card slot.

**Condition-3.** The write protection switch of the card is off.

**Procedure-1.** Power on the unit and continue pressing the power button for more than 4 seconds.

**Procedure-2.** Press the option button 3 times (More precisely, press the option button in 2 seconds after **Procedure-1**, and press it again in half a second, and press it once more in half a seconds!)

If you want to run **LCD/Touch screen diagnostics**, you have to do another operation as follows.

**Procedure-3.** Press the power button within a second after **Procedure-2** above.

### 3. Backup/Restore program mode

The backup/restore program gives you sound guidance prepared for the case that LCD or touch screen hardware is broken. You can see a message on the screen to guide the operation when the LCD works properly, so that you could operate easily following the messages on the screen. If the LCD is broken, take care of the sound from speaker. Sound will be repeated until you press the option button or the power button. All you have to do is to press these buttons when a sound is being repeated. Please remember that pressing power button will NOT be sure to shutdown the unit. The unit will be shutdown automatically as you operate this backup program.

First of all, please refer to Figure 3.1. that shows the flow of backup/restore operation and also refer to Figure 3.2 to backup the whole data in the device memory, and Figure 3.3 to restore the data. You can easily understand what you should do with these flow charts. In addition, please refer to the instruction manual (Figure 3.4.) that describes actions which should be taken in backup/restore program.

**NOTE1:** Do not restore the data that was saved in the other unit. Since each unit has the unique hardware ID, you can not access to the PersonaLink services if you restore the data from the other unit.

**NOTE2:** The real time clock information can not be saved. After restoring the data, you will lose the current time and date information. Please set the time and date again.

Figure 3.1 Backup/Restore branch

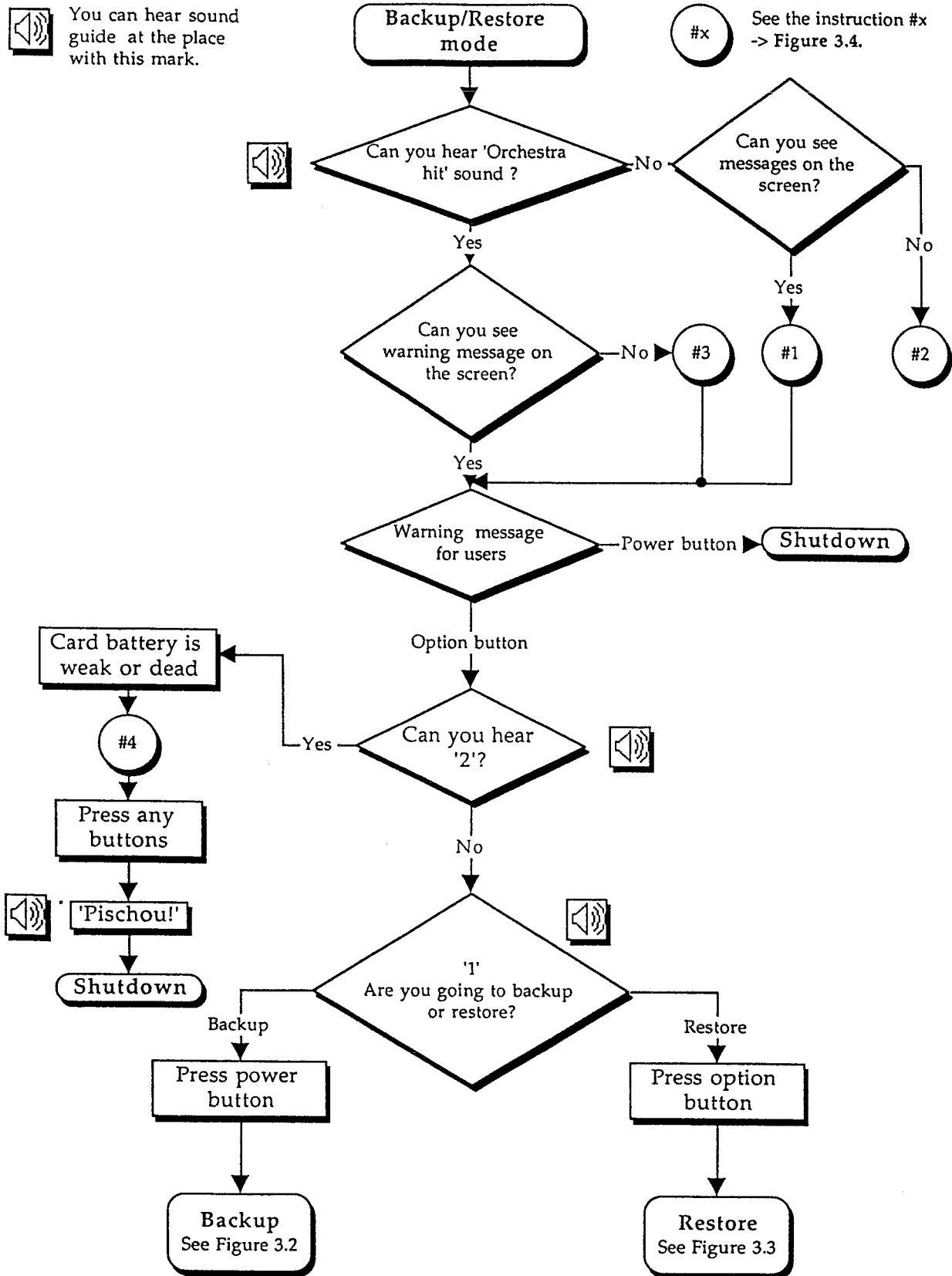


Figure 3.2 Backup flow

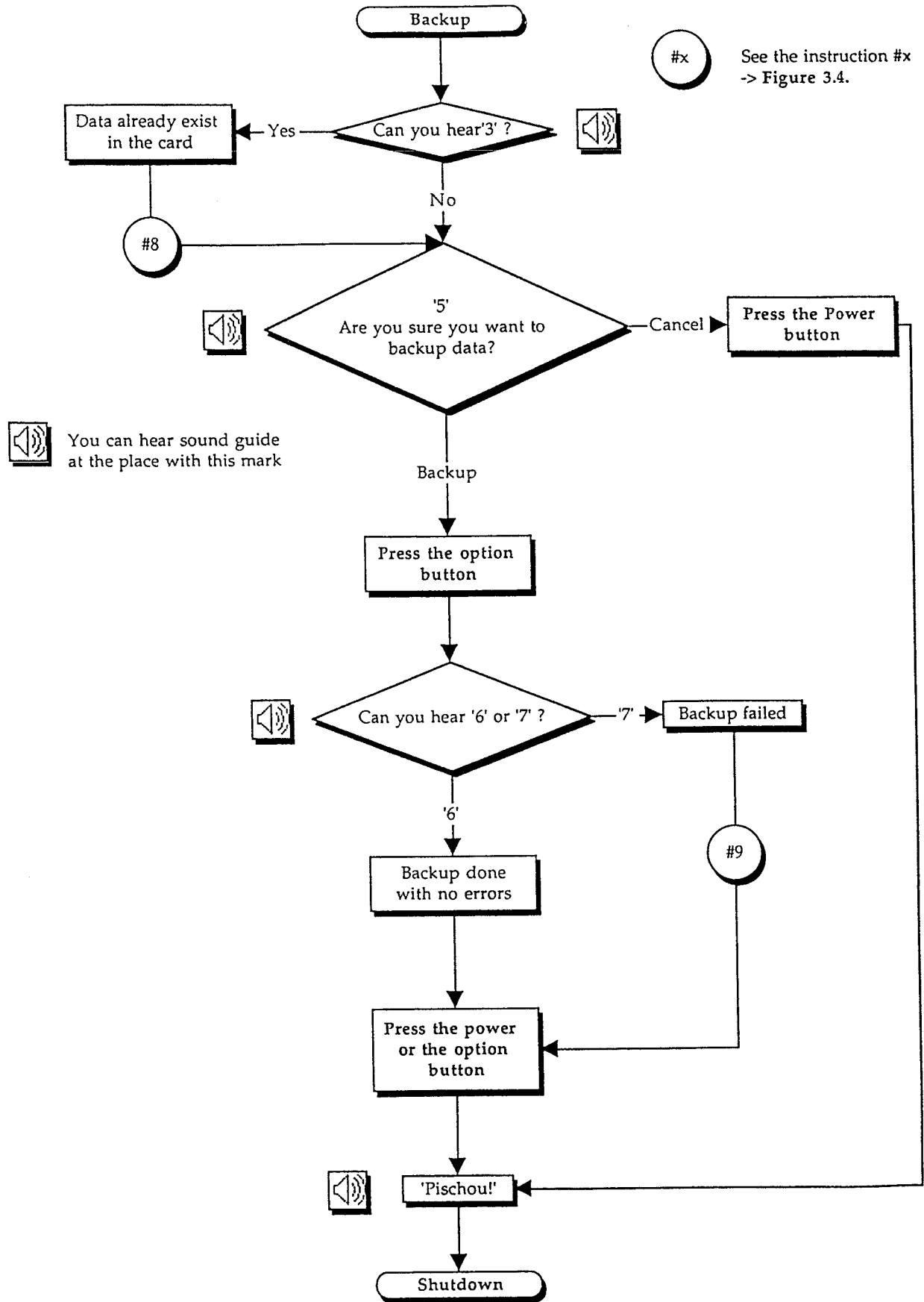


Figure 3.3 Restore flow

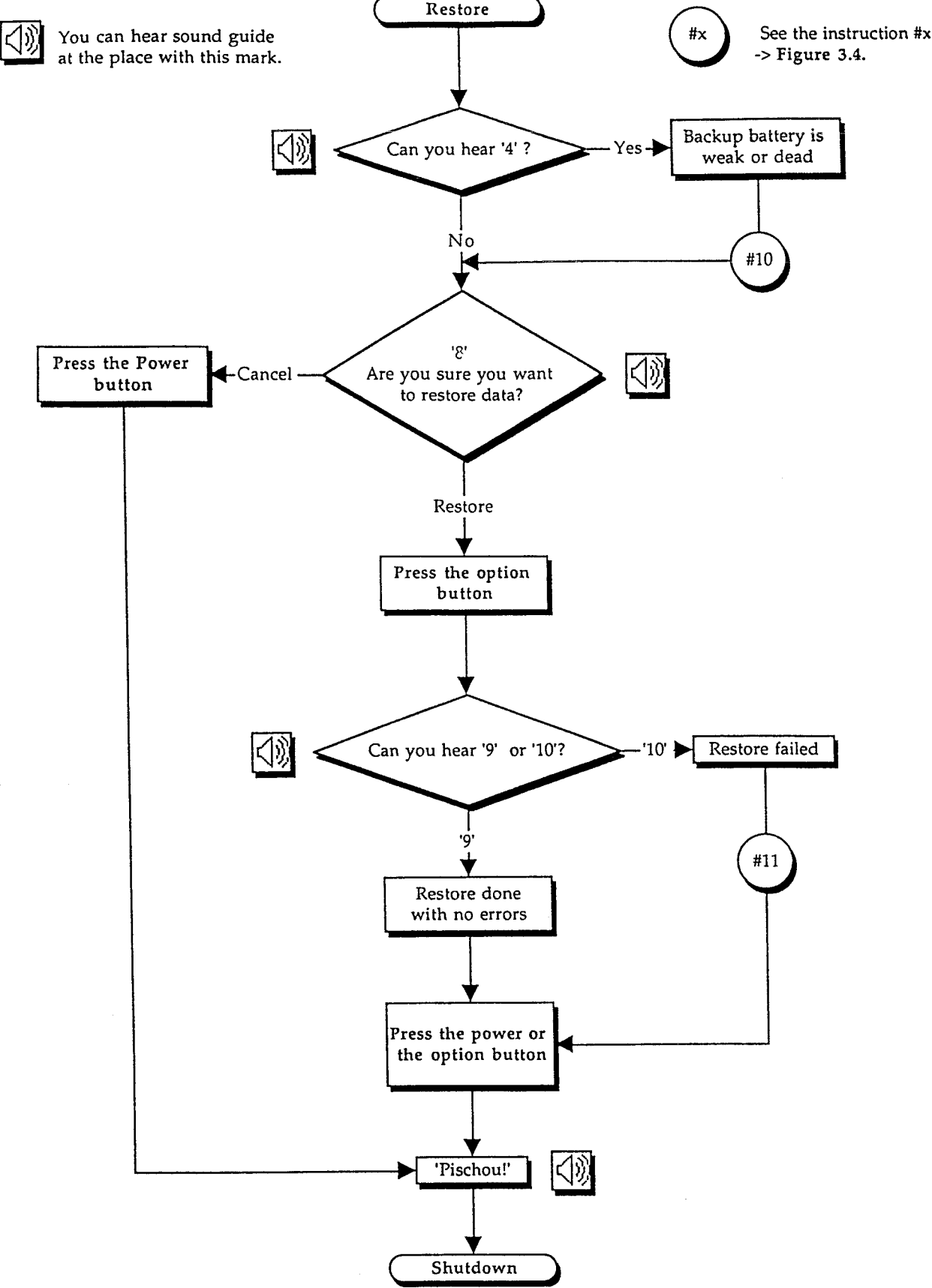















Figure 3.4. Instructions

## Instruction manual for Sony ROM diagnostic

Instruction #	Message
 #1	Please proceed the backup operation by following the messages on the screen. Your unit may have a hardware problem on audio interface
 #2	The unit may not be powered up. Are you sure the unit has a good battery or you plug AC adaptor into the wall? Or, are you sure you press power button properly? Please press the reset switch and see if the unit could boot. If the unit does not boot, the unit may have a fatal hardware problem, or the unit might not be shutdown correctly for some software reason. You can't backup/restore the data.
 #3	The LCD is broken or, the unit may have a hardware problem on LCD or its interface. Please proceed the operation carefully with following the flow chart and listening to the sound voice.
 #4	The backup battery in your card may be empty/dead. Just finish the operation by following the flow chart. You should change the battery and try to run the program again.
 #5	Please proceed the operation by following the messages on the screen. Your unit may have a hardware problem on audio interface
 #6	The unit may not be powered up. Are you sure the unit has a good battery or you plug AC adaptor into the wall? Or, are you sure you press power button properly? Please press the reset switch and see if the unit could boot. If the unit does not boot, the unit may have a fatal hardware problem, or the unit might not be shutdown correctly for some software reason. You can't run the diagnostics.
 #7	The LCD is broken or, the unit may have a hardware problem on LCD interface. Please press the power button to shutdown the unit.
 #8	This card already has certain data for MagicCap. You might backup data using this card before. Just press any buttons and follow the flow chart. You can cancel backup operation in the next stage.
 #9	Backup failed. Your card or memory in the unit may have a hardware problem. Please change the card and try again.
 #10	The backup battery in the unit is weak or dead, or doesn't exist. You can proceed the restoration of data, but please make sure that you will lose the whole data if you remove all the power from the unit. You should install backup battery into the unit and try to do it again from the start.
 #11	Restore failed. Your card or memory in the unit may have a hardware problem. Please change the card and try again.

#### 4. LCD/Touch screen diagnostics mode

**NOTE:** You should get full backup of the data in the device memory BEFORE you run this diagnostics.

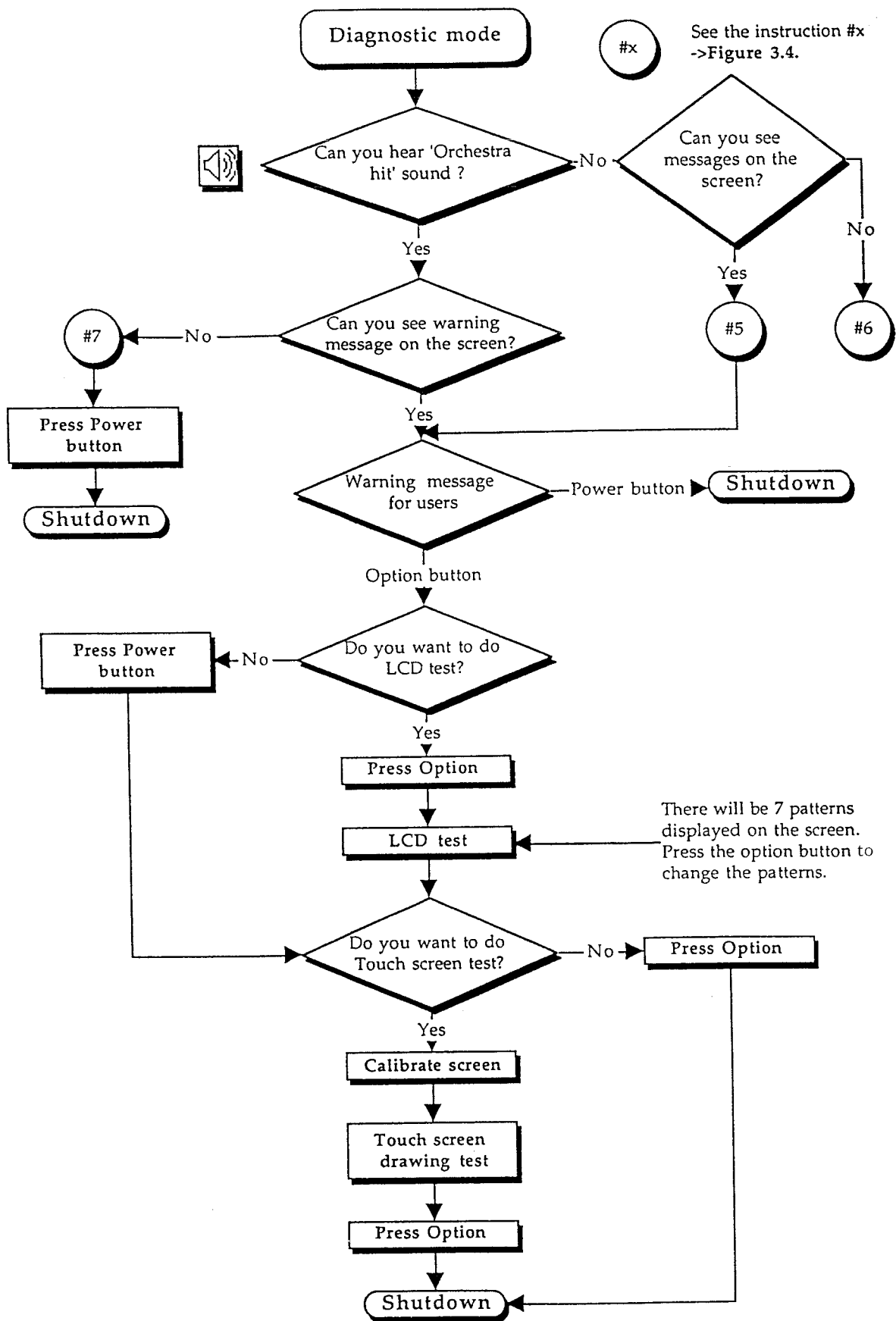
Please see Figure4.1 and Figure 3.4. to run LCD/touch screen diagnostics.

As you can see from the flow of Figure4.1, each diagnostic runs consequently. The LCD diagnostic runs first, and then the diagnostic for touch screen runs when you enter the mode. You can skip each test by pressing the option/power button at a certain stage. (Please see Figure4.1 for details)

In the LCD diagnostic, there will be 7 patterns displayed on the screen. The pattern on the screen will be changed by pressing the option button. If you could recognize unevenness or some big patches on the LCD screen displaying the patterns, it would be better to change the LCD. If you could not see anything on the screen, the LCD should be broken or there should be some hardware problem on its interface.

In the touch screen diagnostic, you have to adjust point of the screen at first. After the calibration of the screen, you can draw on the screen. If you could not draw anything or the trace does not match with your drawing, touch screen hardware might have some problem.

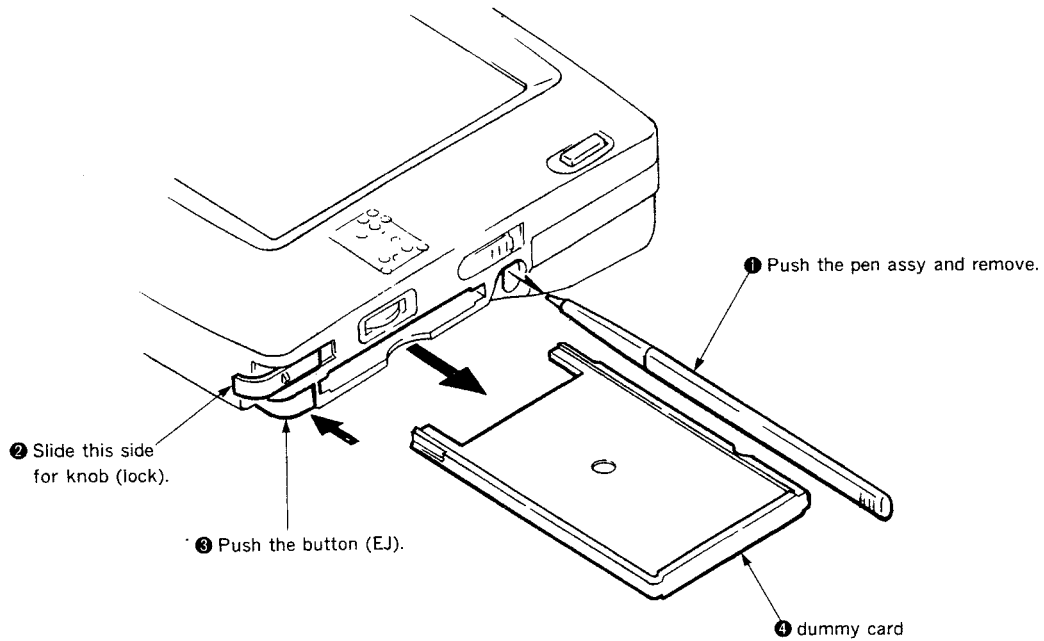
Figure 4.1 Diagnostic mode



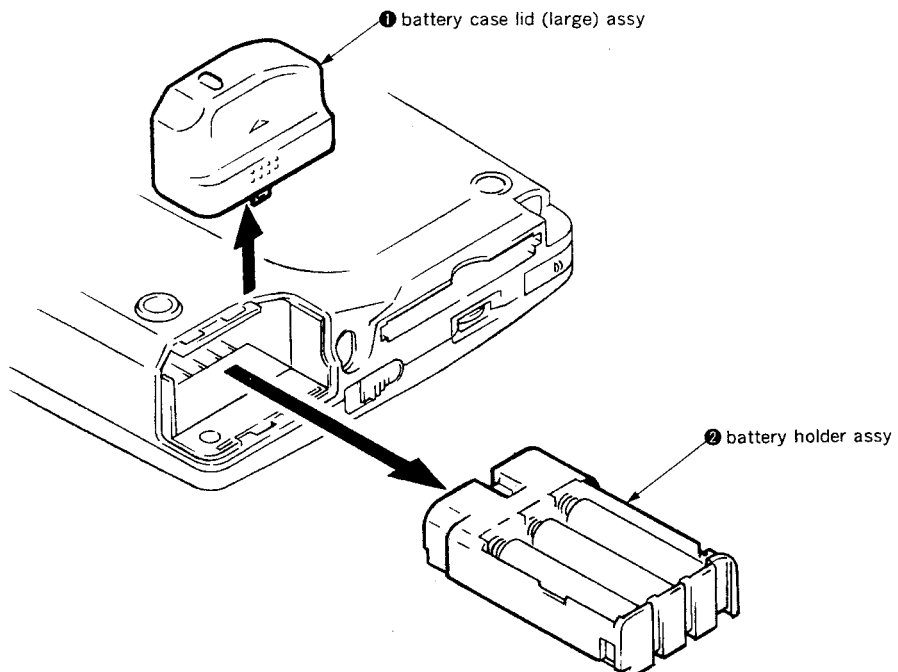
## SECTION 3 DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.

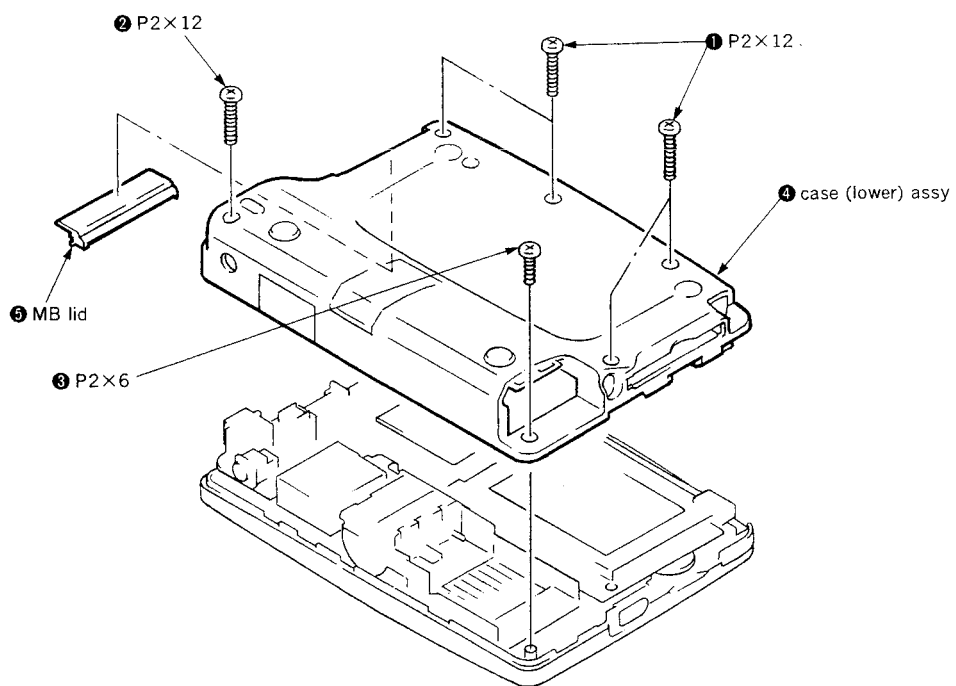
### 3-1. DUMMY CARD



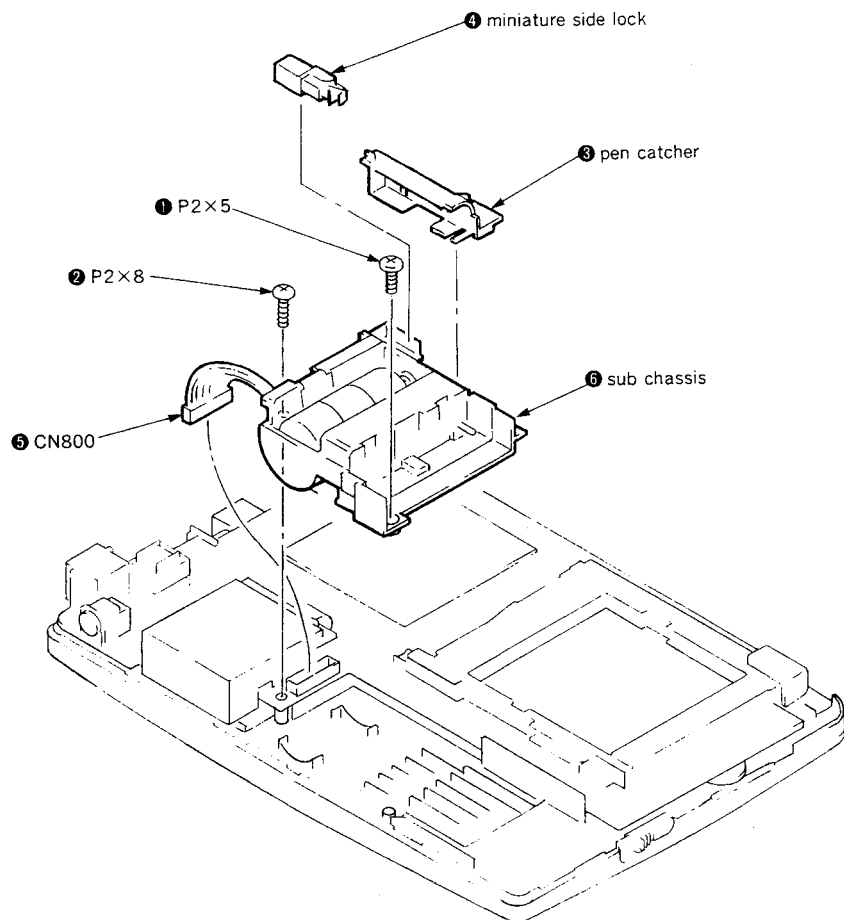
### 3-2. BATTERY HOLDER ASSY



### 3-3. CASE (LOWER) ASSY

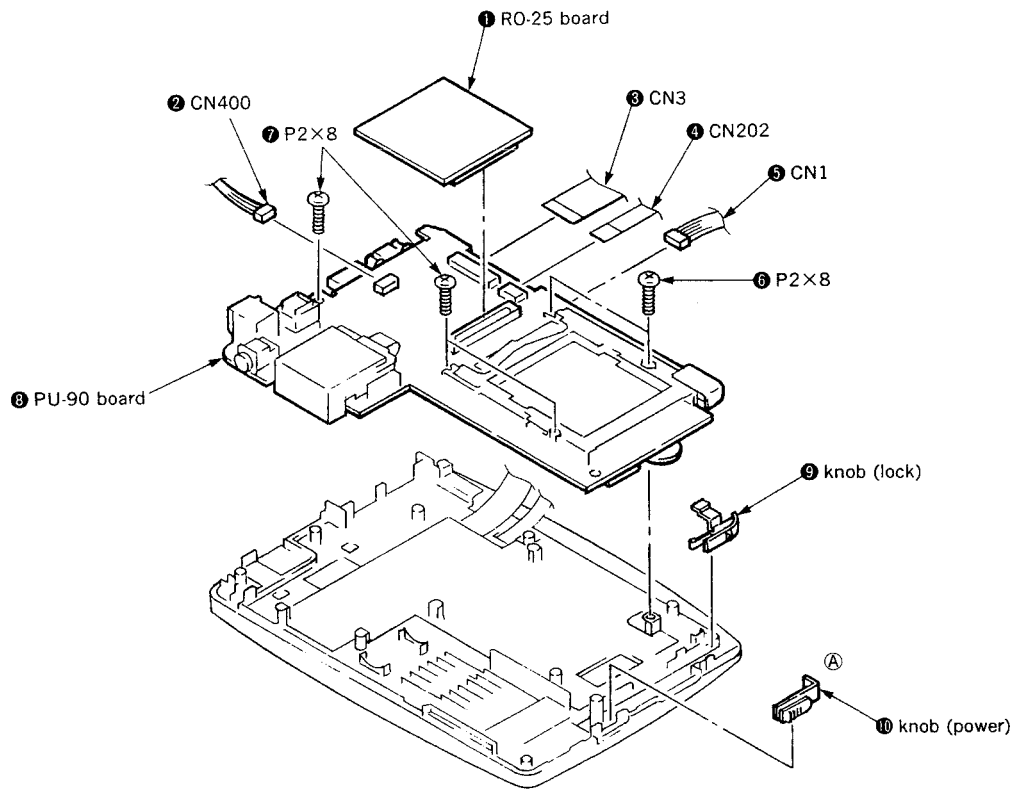


### 3-4. SUB CHASSIS



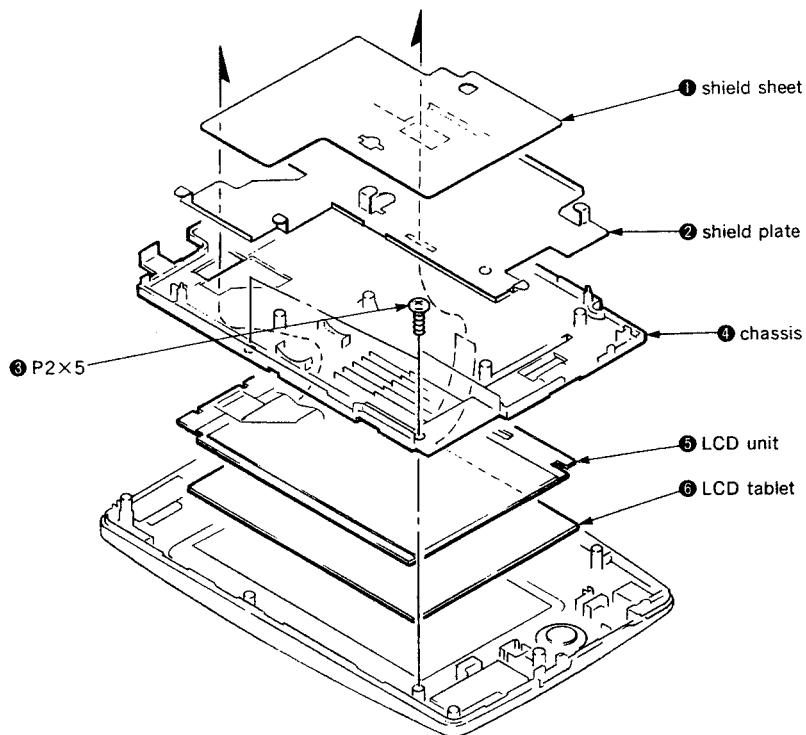
### 3-5. PU-90 BOARD

**Note)** When installing, move the ⑩ knob (power) to side (A) and install the ⑧ PU-90 board.



### 3-6. LCD UNIT

**Note)** When installing, put the flat cable through the holes as indicated by the arrows.



## SECTION 4 EXPLODED VIEW

### NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

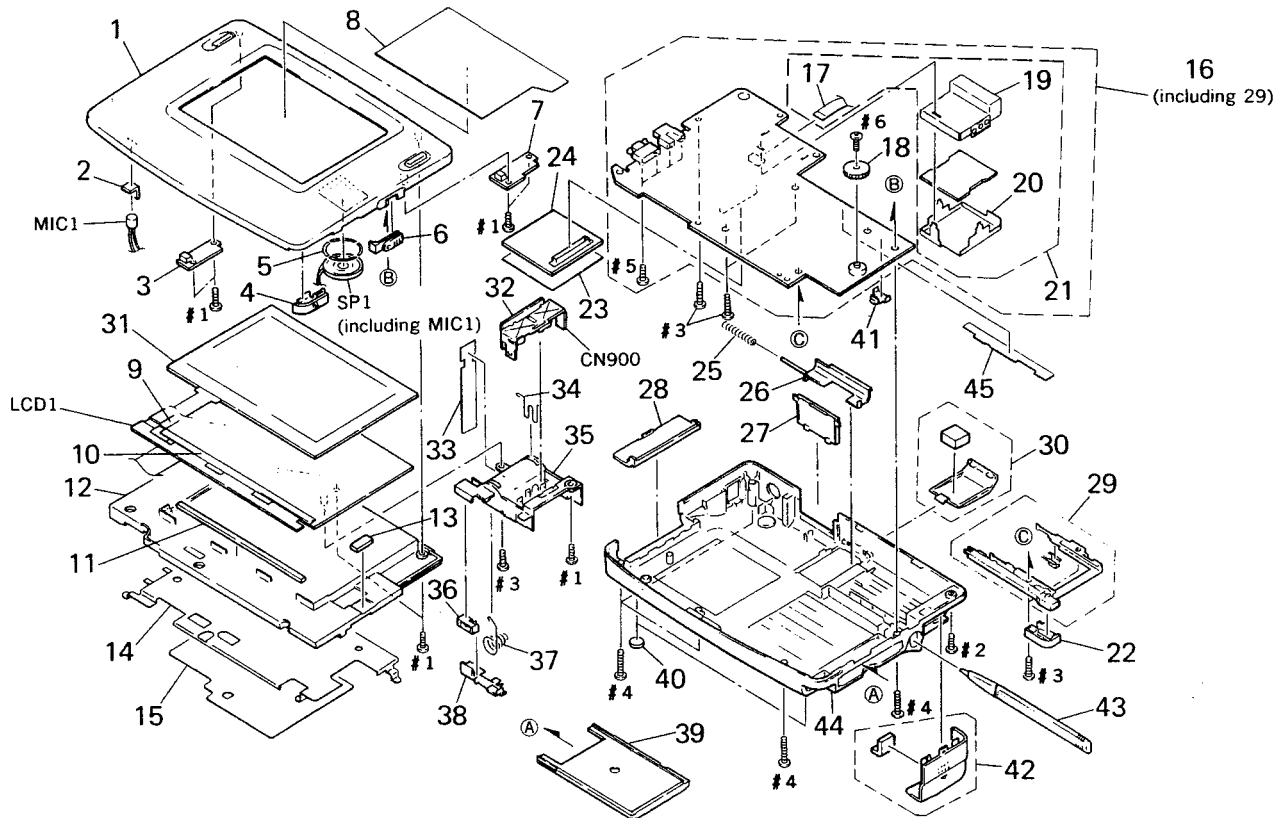
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts

Example :

KNOB, BALANCE (WHITE)... (RED)

↑                      ↑  
Parts Color    Cabinet's Color

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4620-816-3	CASE (UPPER) ASSY		25	4-627-964-01	SPRING (BL). COMPRESSION	
2	4-627-929-01	CUSHION, MICROPHONE		26	4-627-807-01	LOCK, BATTERY	
* 3	1-652-150-11	SW-91 BOARD		27	4-627-804-01	WINDOW, IR	
4	4-627-802-01	KNOB (LOCK)		28	4-627-799-01	LID, MB	
5	4-627-928-01	SHEET, ADHESIVE, SPEAKER		29	1-750-581-11	CONNECTOR, IC CARD 68P	
6	4-627-801-01	KNOB (POWER)		30	X-3369-679-1	LID (SMALL) ASSY, BATTERY CASE	
* 7	1-652-149-11	SW-90 BOARD		31	1-810-484-11	TABLET, LCD	
8	4-627-884-02	STICKER, CAUTION		* 32	1-652-147-11	CN-105 BOARD	
9	4-627-813-01	SPACER (C), SILICON		33	4-628-004-01	PEN ASSY	
10	4-627-810-01	SPACER (B), SILICON		34	4-627-939-01	TERMINAL (A), BATTERY	
11	4-627-809-03	SPACER (A), SILICON		35	4-627-798-01	CHASSIS, SUB	
12	4-627-795-03	CHASSIS		36	4-627-936-01	LOCK, MINIATURE SIDE	
13	3-918-338-01	CUSHION, SPEAKER		37	4-627-940-01	TERMINAL (B), BATTERY	
14	4-627-905-01	PLATE, SHIELD		38	4-627-927-01	CATCHER, PEN	
15	4-627-942-01	SHEET, SHIELD		39	4-627-811-01	CARD, DUMMY	
* 16	A-8052-438-A	PU-90 BOARD, COMPLETE		40	4-627-906-01	FOOT, RUBBER	
17	1-765-671-11	FFC (FLEXIBLE FLAT CABLE)		41	4-627-808-01	COVER, SW	
18	4-627-803-01	KNOB (LCD)		42	X-3369-678-1	LID (LARGE) ASSY, BATTERY CASE	
19	4-627-812-01	PLATE (UPPER), SHIELD, IR		43	X-4620-817-1	PEN ASSY	
20	4-627-814-01	PLATE (LOWER), SHIELD, IR		44	X-4620-836-1	CASE (LOWER) ASSY	
* 21	A-8052-440-A	AN-24 BOARD, COMPLETE		45	4-627-941-01	INSULATOR	
22	4-627-800-01	BUTTON (EJ)		CN900	1-537-436-11	TERMINAL BOARD, BATTERY	
23	3-918-755-01	INSULATOR (ROM)		LCD1	1-810-479-11	LCD UNIT	
* 24	A-8052-442-A	RO-25 BOARD, COMPLETE		* SP1	1-467-709-11	SPEAKER UNIT, MICROPHONE (including MIC1)	

PIC-1000

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		*****	
48	1-810-484-11	TABLET, LCD	
LCD1	1-810-479-11	LCD UNIT	
* SP1	1-467-709-11	SPEAKER UNIT, MICROPHONE (including MIC1)	

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\*\*\*\*\*  
HARDWARE LIST  
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#1	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
#2	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
#3	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT
#4	7-685-107-19	SCREW +P 2X12 TYPE2 NON-SLIT
#5	7-621-772-20	SCREW +B 2X5
#6	7-627-850-68	SCREW, PRECISION +P 1.4X4

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ACCESSORIES & PACKING MATERIALS  
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△	1-467-677-11	ADAPTOR, AC
	1-696-454-11	CORD (WITH MODULAR PLUG) (LINE)
	3-758-882-21	MANUAL, INSTRUCTION (Read This First) (ENGLISH)
	3-758-883-21	MANUAL, INSTRUCTION (User's Guide) (ENGLISH)
	3-758-884-21	MANUAL, INSTRUCTION (PenCell User's Guide) (ENGLISH)
	3-759-995-21	MANUAL, INSTRUCTION (Supplements) (ENGLISH)
	4-627-217-01	MANUAL, AT & T
	4-627-954-01	CASE, CARRYING
	X-4620-818-1	HOLDER ASSY, BATTERY

The components identified by  
mark △ or dotted line with mark.  
△ are critical for safety.  
Replace only with part number  
specified.